

REMARKS

Claims 1-30 were pending in the subject application. Applicants have hereinabove amended claims 1, 6-20 and 24; added new claims 31-32; and canceled claims 25-30. Claims 1-24 and 31-32 are now pending in the subject application.

The specification has been amended clarify that, in certain embodiments, the group referred to as R^2 is R^1 . Support for this amendment to the specification can be found in the original specification at, for example, page 3 lines 10-12 (see the group of formula 2) and the Examples.

Claim 1 has been amended to delete the terms “solvate,” “hydrate” and “prodrug” and to delete reference to embodiments where “ R^2 and R^3 taken together with the carbon atom they are linked to can form a 3-7 membered cycloalkyl ring or 4-7 membered heterocycloalkyl ring.” Claim 1 has also been amended to specify that R^4 is selected from the group consisting of “ C_6 - C_{10} aryl and 5-10 membered heteroaryl”

Claims 6-10 have been amended to replace the term “ R^2 ” with the term “ R^1 .”

Claims 11-16 have been amended to delete the second recitation of the term “wherein.”

Claim 17 has been amended to include the phrase “any one of” before reciting the base claims upon which claim 17 depends. Claim 17 has also been amended to include the term “and” at the end of the Markush groups.

Claims 18 (which depends upon claim 17) has been amended to delete the reference to R^3 , because the definition of R^3 recited in original claim 18 is the same as the definition of R^3 recited in base claim 17.

Claim 19 has been amended to specify that R^4 is an optionally substituted 5-10 membered heteroaryl

Claim 20 has been amended to depend from claim 1 and to specify that R^4 is an optionally substituted aryl.

Claim 24 has been amended to read as an independent claim and to delete the terms “solvate,” “hydrate” and “prodrug.”

Claims 1 and 20 have also been amended to replace the term “substitutents” with the term “substituents.”

New claim 30 is directed to method for the treatment of breast cancer in a mammal comprising administering to said mammal an amount of a compound of claim

1 that is effective in treating breast cancer.

New claim 31 is directed to a pharmaceutical composition comprising a compound of claim 1 and a pharmaceutically acceptable carrier.

Support for the amendment to claim 1 can be found in the original specification at, for example, original claims 1 and 19.

Support for the amendments to claims 6-10 can be found in the original specification at, for example, page 3, original claim 1 (see group of formula 2) and the Examples.

Support for the amendments to claims 11-16 can be found in the original specification at, for example, original claims 11-16.

Support for the amendment to claim 17 can be found in the original specification at, for example, original claim 17.

Support for the amendment to claim 19 can be found in the original specification at, for example, original claim 19.

Support for the amendment to claim 20 can be found in the original specification at, for example, original claim 20.

Support for the amendment to claim 24 can be found in the original specification at, for example, original claim 24.

Support for new claim 31 can be found in the original specification at, for example, original claims 25-28.

Support for new claim 32 can be found in the original specification at, for example, original claims 30.

No new matter is added by these amendments and Applicants respectfully request their entry.

I. Rejection of Claims 1-30 Under 35 U.S.C. §112, Second Paragraph

Claims 1-30 have been rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as his invention for the reasons set forth below.

The Examiner asserts that “[r]ecitation of ‘prodrug thereof’ in claim 1 and claim 24 renders these claims and the dependent claims 2-23 and 25-30 indefinite.” Claims 1 and 24 have been amended to delete the term “prodrug.” Therefore, Applicants

respectfully submit that the Examiner's rejection of claims 1-30 based on the use of the term "prodrug" has been overcome.

The Examiner asserts that "[c]laim 17 is an improper dependent claim. Note claim 17 is dependent on claim 1 and claims 11-16. Note Markush choices should be in alternate form." Claim 17 has been amended include the phrase "any one of" before reciting the base claims upon which claim 17 depends. (See MPEP § 608.01(n)(I)A (providing examples of acceptable multiple dependent claim wording).) Therefore, Applicants respectfully submit that the Examiner's rejection of claim 17 based on improper dependency has been overcome.

In view of the above, Applicants respectfully submit that the above amendments to claims 1, 17 and 24 and arguments fully address the rejection of claims 1-24 (claims 25-30 having been cancelled), and request that the rejection of the claims under 35 U.S.C. § 112, second paragraph be withdrawn.

II. Rejection of Claims 1-30 Under 35 U.S.C. §112, First Paragraph

Claims 1-30 have been rejected under 35 U.S.C. § 112, first paragraph as allegedly failing to provide enablement for making prodrugs, solvates and hydrate of the claimed compounds for the reasons set forth in the Office Action.

The Examiner asserts that [t]he claim[s] contain subject matter that was not described in the specification in such a way as to enable one skilled in the art of medicinal chemistry – to use the invention." The Examiner further states that "[t]he recitation of prodrug is found on page 32 the passage spanning line[s] 23-35. There is no working example of a prodrug of a compound of formula (I)." The Examiner contends that "undue experimentation will be required to determine if any particular derivative is, in fact a prodrug."

The Examiner further states that [t]he claim[s] contain subject matter that was not described in the specification in such a way as to enable any person skilled in the art to which it pertains, or with which it is most closely connected, to made and use the invention in commensurate in scope with these claims." In particular, the Examiner asserts that "the specification, while being enabling for making pharmaceutically acceptable salts does not reasonably provide enablement for making solvate or hydrate." The Examiner contends that "there should be showing support that solvates and hydrates

of these compounds exist and therefore can be made.”

We disagree with the Examiners assertion that one skilled in the art of medicinal chemistry could not determine if any particular derivative is a prodrug without undue experimentation. We also disagree with the Examiners assertion that the specification does not reasonable provide enablement for making solvates or hydrates. However, in order to advance the prosecution of this application, independent claims 1 and 24 have been amended to delete the terms “prodrug,” “solvates” and “hydrates.”

Claims 25-30 have been rejected under 35 U.S.C. § 112, first paragraph. The Examiner states that “the specification while being enabling for treating breast cancer, does not reasonably provide enablement for treating any or all abnormal cell growth or any or all cancers.” Claims 25-30 have been cancelled, thereby rendering the Examiner’s rejection of those claims moot.

In view of the above, Applicants respectfully submit that the above amendments to claims 1 and 24 and arguments fully address the enablement rejection of claims 1-24 (claims 25-30 having been cancelled), and request that the rejection of the claims under 35 U.S.C. § 112, first paragraph be withdrawn.

III. Claim Rejections under 35 U.S.C. §102(e)

Claims 1-23 and 25-30 have been rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent Publication No. 2003/0171359 to Dahmann et al. (“Dahmann”); claims 1-9 and 11-23 have been rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent Publication No. 2003/0134838 to Bornemann et al. (“Bornemann”)¹; and claims 1-23 and 25-30 have been rejected under 35 U.S.C. §102(e) as allegedly being anticipated by International Publication No. WO 03/030909 to Nagarathnam et al. (“Nagarathnam”) for the reasons set forth in the Office Action. Applicants respectfully disagree for the reasons set forth below.

A. Claims 1-23 and 25-30 are not Anticipated by Dahmann

The Examiner states that “Dahmann et al. teaches several 2,4-substituted

¹ Applicants note that the Office Action incorrectly refers to the Bornemann reference as U.S. Patent Application Publication No. 2005/0009853, which, of course, is the publication number of Applicants application (see page 16 of the Office Action). Applicants believe that the Bornemann reference is U.S. Patent Publication No. 2003/013438 (see Reference “B” in the Notice or References Cited mailed December 7, 2005).

diaminopyrimidine compounds for treating abnormal cell growth, which includes the instant compounds. See pages 1-5, formula 1 and note the definition of various variable groups R^a , R^b , R^c , R^d and R^e , compounds taught by Dahmann et al. include instant compounds.” The Examiner further states that “[n]ote claims 25-30 are rejected as method of use of Dahmann et al. include breast cancer.” Applicants respectfully disagree.

Amended claim 1 of the subject invention recites compounds of formula 1 (see claim 1, *supra*), wherein the carbon atom at the 4 position (“the C4 position”) of the pyrimidine core is bonded to a group having the formula $-A-B-C(R^2R^3)_n-R^4$ “wherein A is present or absent, if present A is selected from the group consisting of O, S and NH and wherein B is present or absent, if present B is selected from the group consisting of CO, SO₂, and NR⁶, with the proviso that when A is O or S that B is absent;” “n is an integer from 1 to 3;” and R^4 is selected from the group consisting of optionally substituted C₆-C₁₀ aryl and optionally substituted 5-10 membered heteroaryl.

Dahmann relates to 2,4-substituted diaminopyrimidine compounds; however, Dahmann does not disclose any compound where the carbon atom at the 4 position of the pyrimidine core is attached to an O, S, CO or SO₂ as recited in one aspect of amended claim 1 of the subject application. In addition, Dahmann does not disclose any compound where the C4 position of the pyrimidine core is bonded a group of formula $-NHC(R^2R^3)_n-R^4$, $-NR^6C(R^2R^3)_n-R^4$ or $-C(R^2R^3)_n-R^4$, where n is an integer from 1 to 3 and R^4 is an optionally substituted aryl or heteroaryl, as recited in yet another aspect of amended claim 1 of the subject application. Therefore, claim 1 and claims 2-23 (which depend directly or indirectly upon claim 1) are not anticipated by Dahmann. See MPEP 2131 (“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” (quoting *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987))).

Claims 25-30 have been cancelled, thereby rendering the Examiner’s rejection of those claims moot.

In view of the above, Applicants respectfully submit that claims 1-23 are not anticipated by Dahmann, and request that the rejection of claims 1-23 under 35 U.S.C § 102(e) be withdrawn.

B. Claims 1-9 and 11-23 are not Anticipated by Bornemann

The Examiner states that “Bornemann et al. teaches several 2,4-substituted diaminopyrimidine compounds for treating illness due β -amyloid which include instant compounds. See pages 1-10, formula 1 and note the definition of various variable groups R^a , R^b , R^c , R^d and R^e . Especially note with the given definition of R^a , R^b , R^c , R^d and R^e , compounds taught by Bornemann et al. include instant compound. See entire document for details. See pages 18-25 for examples of compounds made. Especially see example 1, compound[s] 43, 60, 70 and example 2, compound 16.” Applicants respectfully disagree.

Bornemann is directed to compounds where the carbon atom at the 5 position (“the C5 position”) of the pyrimidine ring is bonded to an -N-containing group (e.g., a nitro, amino, azido) (see page 2, ¶ [0043] to page 4, ¶ [0083] of Bornemann). All of the 2,4-diaminopyrimidine compounds exemplified by Bornemann are bonded to an -N-containing group at the C5 position of the pyrimidine ring (see Examples 1-13, pages 18-15 of Bornemann). Thus, Bornemann does not disclose a compound where the substituent at the 5 position of the pyrimidine ring (R^5) “is selected from the group consisting of H, Br, Cl, CN, CF_3 , CH_2F , CHF_2 , SO_2CH_3 , $CONH_2$, cyclopropyl, cyclobutyl, C_6H_5 , $CONHR^6$, $CONR^6R^7$, CO_2R^6 , $C(R^9)=C(R^9)_2$, and $C\equiv CR^9$ ” as recited in amended claim 1 of the subject application. Accordingly, Bornemann does not disclose each and every element set forth in claim 1 as required by *Verdegaal Bros.* Therefore, claims 1-9 and 11-23 (claims 2-9 and 11-23 depending directly or indirectly upon claim 1) are not anticipated by Bornemann.

In view of the above, Applicants respectfully submit that claims 1-9 and 11-23 are not anticipated by Bornemann, and request that the rejection of claims 1-9 and 11-23 under 35 U.S.C § 102(e) be withdrawn.

C. Claims 1-23 and 25-30 are not Anticipated by Nagarathnam

The Examiner states that “Nagarathnam et al. teaches several 2,4-substituted diaminopyrimidine compounds for treating viral infection and cancer, which include instant compounds. See pages 3-10, formula 1 and note the definition of various variable groups C, R^2 and R^3 . Especially note with the given definition of C, R^2 and R^3 , compounds taught by Nagarathnam et al. include instant compounds. See entire document for details. See pages 27-87 including Table 1-3 for large number of

examples of compounds made.” The Examiner further states that “[n]ote claims 25-30 are rejected as method of use of Nagarathnam et al. include breast cancer.” Applicants respectfully disagree.

Claim 1 of the subject invention recites compounds of formula 1 (see claim 1, supra), wherein the group attached carbon atom at the 2 position (“the C2 position”) of the pyrimidine core is attached to a group having the formula $-N(H)R^1$, where R^1 is a fused-ring aryl or fused-ring heteroaryl as defined in claim 1. Claim 1 of the subject invention also recites that the C4 position of the pyrimidine core is attached to a group having the formula $-A-B-C(R^2R^3)_n-R^4$ “wherein A is present or absent, if present A is selected from the group consisting of O, S and NH and wherein B is present or absent, if present B is selected from the group consisting of CO, SO₂, and NR⁶, with the proviso that when A is O or S that B is absent;” “n is an integer from 1 to 3;” and R^4 is selected from the group consisting of optionally substituted C₆-C₁₀ aryl and optionally substituted 5-10 membered heteroaryl.

Nagarathnam is directed to pyrimidine derivatives; however, Nagarathnam does not disclose any compound where the C4 position of the pyrimidine core is attached to an O, S, CO or SO₂ as recited in one aspect of claim 1 of the subject application. In addition, Nagarathnam does not disclose any compound where the C2 position of the pyrimidine core is bonded an $-N(H)$ -fused-ring aryl or $-N(H)$ -fused-ring heteroaryl as defined in claim 1, and the C4 position of the pyrimidine core is bonded a group of formula $-NHC(R^2R^3)_n-R^4$, $-NR^6C(R^2R^3)_n-R^4$ or $-C(R^2R^3)_n-R^4$, where n is an integer from 1 to 3 and R^4 is an optionally substituted aryl or heteroaryl, as recited in yet another aspect of amended claim 1 of the subject application. And because Nagarathnam does not disclose each and every element set forth in claim 1 as required by *Verdegaal Bros.*, claims 1-23 (claims 2-23 depending directly or indirectly upon claim 1) are not anticipated by Nagarathnam.

Claims 25-30 have been cancelled, thereby rendering the Examiner’s rejection of those claims moot.

In view of the above, Applicants respectfully submit that claims 1-23 are not anticipated by Nagarathnan, and request that the rejection of claims 1-23 under 35 U.S.C § 102(e) be withdrawn.

IV. Claim Rejections under 35 U.S.C. §103(a)

Claims 1-30 have been rejected under 35 U.S.C. §103(a) as allegedly being obvious over Dahmann; claims 1-23 have been rejected under 35 U.S.C. §103(a) as allegedly being obvious over Bornemann; and claims 1-30 have been rejected under 35 U.S.C. §103(a) as allegedly being obvious over Nagarathnam for the reasons set forth in the Office Action. Applicants respectfully traverse these rejections for the reasons set forth below.

A. Claims 1-30 are not Obvious over Dahmann

The Examiner states that “[t]he teachings of Dahmann et al. as discussed in the above 102 rejection is incorporated herein. As noted above, Dahmann et al. teaches 2,4-substituted diaminopyrimidine compounds for treating abnormal cell growth, which includes the instant compounds. See pages 1-5, formula 1 and note the definition of various variable groups R^a, R^b, R^c, R^d and R^e, compounds taught by Dahmann et al. include instant compounds.” The Examiner further states that “[n]ote claims 25-30 are rejected as method of use of Dahmann et al. include breast cancer.” The Examiner concedes that “Dahmann et al. differs from the instant claims in exemplifying only limited number of compounds of the genus claimed in page 1 for compound of formula I.” Nevertheless, the Examiner asserts that “Dahmann et al. teaches the equivalency of those compounds taught in pages 23-86 with those generically recited in pages 1-5.” The Examiner contends that “it would have been obvious to one having ordinary skill in the art at the time of [sic] the invention was made to make compounds using the teachings of Dahmann et al. and expect resulting compounds to possess the uses taught by the art in view of the equivalency teaching outline[d] above.” Applicants respectfully disagree.

Dahmann relates to a broad genus of 2,4-substituted diaminopyrimidine compounds (see page 2, ¶ [0026] – page 10, ¶ [0165]) where the carbon atom at the 4 position of the pyrimidine core is substituted by a group of formula –NR^cR^d. Dahmann describes a large number of combinations of R^c and R^d (see page 4, ¶ [0066] – page 19, ¶ [280]). Included within the large combination of possible –NR^cR^d groups are embodiments where R^c can be, *inter alia*, aralkyl and where R^d can be, *inter alia*, an alkyl substituted with an aryl or heteroaryl. However, Dahmann does teach or even

suggest any compound where the C4 position of the pyrimidine core is bonded to a group of formula $\text{-NHC(R}^2\text{R}^3)_n\text{-R}^4$, $\text{-NR}^6\text{C(R}^2\text{R}^3)_n\text{-R}^4$ or $\text{-C(R}^2\text{R}^3)_n\text{-R}^4$ where R^4 is an optionally substituted aryl or 5-10 membered heteroaryl as recited in one aspect of amended claim 1 of the subject application. Similarly, Dahmann does not teach or even suggest any compound where the carbon atom at the 4 position of the pyrimidine core is attached to an O, S, CO or SO_2 as recited in another aspect amended claim 1 of the subject application.

“One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” *In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988).

In summary, Dahmann does not teach or even suggest any compound where the carbon atom at the carbon atom at the 4 position of the pyrimidine core is attached to an O, S, CO or SO_2 as recited in one aspect of amended claim 1 of the subject application. Nor does Dahmann provide any teaching or suggestion to make or use a compound where the C4 position of the pyrimidine core is bonded a group of formula $\text{-NHC(R}^2\text{R}^3)_n\text{-R}^4$, $\text{-NR}^6\text{C(R}^2\text{R}^3)_n\text{-R}^4$ or $\text{-C(R}^2\text{R}^3)_n\text{-R}^4$, where n is an integer from 1 to 3 and R^4 is an optionally substituted aryl or heteroaryl, as recited in yet another aspect of amended claim 1 of the subject application. Thus, one of skill in the art would find no suggestion to select among the myriad of variables described in Dahmann’s generic formula and thereby arrive at a pyrimidine where the carbon atom at the C4 position of the pyrimidine core is attached to an O, S, CO, SO_2 , or a group of formula $\text{-NHC(R}^2\text{R}^3)_n\text{-R}^4$, $\text{-NR}^6\text{C(R}^2\text{R}^3)_n\text{-R}^4$ or $\text{-C(R}^2\text{R}^3)_n\text{-R}^4$, as recited in amended claim 1 of the subject application. Therefore, claims 1-23 (claims 2-23 depending directly or indirectly upon claim 1) are not obvious over Dahmann.

Independent claim 24 recites compounds of the invention. Dahmann does not disclose any of the compounds recited in claim 24, nor does Dahmann even suggest that the recited compounds should be made or used as required by *In re Ochiai*. Therefore, the compounds recited in claim 24 are not obvious over Dahmann.

Claims 25-30 have been cancelled, thereby rendering the Examiner’s rejection of those claims moot.

In view of the above, Applicants respectfully submit that claims 1-24 are not obvious over Dahmann, and request that the rejection of claims 1-24 under 35 U.S.C § 103(a) be withdrawn.

B. Claims 1-23 are not Obvious over Bornemann

The Examiner states that “Bornemann et al. teaches several 2,4-substituted diaminopyrimidine compounds for treating illness due β -amyloid which include instant compounds. See pages 1-10, formula 1 and note the definition of various variable groups R^a , R^b , R^c , R^d and R^e . Especially note with the given definition of R^a , R^b , R^c , R^d and R^e , compounds taught by Bornemann et al. include instant compound. See entire document for details. See pages 18-25 for examples of compounds made. Especially see example 1, compound[s] 43, 60, 70 and example 2, compound 16.” The Examiner concedes that “Bornemann et al. differs from the instant claims in not exemplifying all compounds generically embraced in the compound of formula 1 shown in page 1-10.” Nevertheless, the Examiner asserts that “Bornemann et al. teaches the equivalency of those compounds taught in pages 18-25 with those generically recited in pages 1-10.” The Examiner contends that “it would have been obvious to one of having ordinary skill in the art at the time of [sic] the invention was made to make compounds using the teachings of Bornemann et al. and expect resulting compounds to possess the uses taught by the art in view of the equivalency teaching outline[d] above.” Applicants respectfully disagree.

As discussed above, Bornemann is directed to compounds where the carbon atom at the 5 position of the pyrimidine ring is bonded to an -N-containing group (e.g., a nitro, amino, azido) (see page 2, ¶ [0043] to page 4, ¶ [0083] of Bornemann). All 2,4-diaminopyrimidine compounds exemplified by Bornemann are bonded to an -N-containing group at the 5-position of the pyrimidine ring (see Examples 1-13, pages 18-15 of Bornemann). Nowhere does Bornemann teach or even suggest a compound where the substituent at the C5 position of the pyrimidine ring (R^5) should be “selected from the group consisting of H, Br, Cl, CN, CF_3 , CH_2F , CHF_2 , SO_2CH_3 , $CONH_2$, cyclopropyl, cyclobutyl, C_6H_5 , $CONHR^6$, $CONR^6R^7$, CO_2R^6 , $C(R^9)=C(R^9)_2$, and $C\equiv CR^9$ ” as recited in amended claim 1 of the subject application. Thus, one of skill in the art would find no suggestion in Bornemann to modify his teachings and thereby arrive at the claimed invention.

In view of the above, Applicants respectfully submit that claims 1-23 (claims 2-23 depending directly or indirectly upon claim 1) are not obvious over Bornemann, and request that the rejection of claims 1-23 under 35 U.S.C § 103(a) be withdrawn.

C. Claims 1-30 are not Obvious over Nagarathnam

The Examiner states that "Nagarathnam et al. teaches several 2,4-substituted diaminopyrimidine compounds for treating viral infection and cancer, which include instant compounds. See pages 3-10, formula 1 and note the definition of various variable groups C, R² and R³. Especially note with the given definition of C, R² and R³, compounds taught by Nagarathnam et al. include instant compounds. See entire document for details. See pages 27-87 including Table 1-3 for large number of examples of compounds made." The Examiner further states that "[n]ote claims 25-30 are rejected as method of use of Nagarathnam et al. include breast cancer." The Examiner concedes that "Nagarathnam et al. differs from the instant claims in not exemplifying only all the compounds of the genus claimed in pages 3-10 for compound of formula I." Nevertheless, the Examiner asserts that "Nagarathnam et al. teaches the equivalency of those compounds taught in pages 27-87 with those generically recited in pages 3-10." The Examiner contends that "it would have been obvious to one having ordinary skill in the art at the time of [sic] the invention was made to make compounds using the teachings of Nagarathnam et al. and expect resulting compounds to possess the uses taught by the art in view of the equivalency teaching outline[d] above." Applicants respectfully disagree.

Nagarathnam relates to a broad genus of pyrimidine derivatives where the C2 and C4 positions of the pyrimidine core are each bonded to a group X, as defined in Nagarathnam. In its broadest embodiment, Nagarathnam describes compounds where X can be NR¹R⁶, NR⁴R⁵ or R⁴. As described by Nagarathnam, R¹ is "an optionally substituted fused bicyclic unsaturated ring" (see page 3, lines 12-13); "R⁶ is hydrogen or alkyl" (see page 4, line 30); R⁴ is "an optionally substituted Y_(n)-mono-ring group or optionally substituted Y_(n)-multi-ring group" where "n is 0 or 1 and -Y- is selected from the group consisting of straight- or branched-chain C₂-C₃ alkylenyl and -C(CN)-" (see page 4, lines 1-2 and 5-6); and R⁵ is "an optionally substituted Y_(n)-mono-ring group or optionally substituted Y_(n)-multi-ring group" where "n is 0 or 1 and -Y- is selected from the group consisting of straight- or branched-chain C₂-C₃ alkylenyl, -N=CH-, and -N=CHCH₃" (see page 4, lines 16-17 and 20-22).

However, Nagarathnam does **not** teach or even suggest any compound where the C4 position of the pyrimidine core is bonded to an O, S, CO or SO₂ **and** the C2 position

of the pyrimidine core is bonded to a group such as a -N(H)-fused-ring aryl or -N(H)-fused-ring heteroaryl as recited in one aspect of amended claim 1. Nor does Nagarathnam teach or even suggest any compound where the C2 position of the pyrimidine core is bonded to a group such as a -N(H)-fused-ring aryl or -N(H)-fused-ring heteroaryl and the C4 position of the pyrimidine core is bonded a group of formula -NHC(R²R³)_n-R⁴, -NR⁶C(R²R³)_n-R⁴ or -C(R²R³)_n-R⁴, where n is an integer from 1 to 3 and R⁴ is an optionally substituted aryl or heteroaryl, as recited in yet another aspect of amended claim 1 of the subject application. Therefore, one of skill in the art would find no suggestion in Nagarathnam to modify his teachings and thereby arrive at the claimed invention.

Independent claim 24 recites compounds of the invention. Nagarathnam does not teach or even suggest any of the compounds recited in claim 24, nor does Nagarathnam teach or even suggest modifying his disclosed compounds in order to arrive at the compounds recited in claim 24. Therefore, one of skill in the art would find no suggestion in Nagarathnam to modify his compounds and thereby arrive at the compounds recited in claim 24.

Claims 25-30 have been cancelled, thereby rendering the Examiner's rejection of those claims moot.

In view of the above, Applicants respectfully submit that claims 1-24 are not obvious over Nagarathnam, and request that the rejection of claims 1-24 under 35 U.S.C § 103(a) be withdrawn.

V. Provisional Rejection of Claims 1-30 under the Judicially Created Doctrine of Obviousness Double Patenting

The Examiner provisionally rejected claims 1-30 under the judicially created doctrine of double patenting as allegedly being unpatentable over claims 1-46 of copending Application No. 10/733,215. The Examiner concedes that "the conflicting claims are not identical." Nevertheless, the Examiner asserts that "they are not patentably distinct from each other because the subject matter embraced in the instant claims are [sic] also embraced in the copending application 10/733215. Note substituents 2, 4 and 5 of the instant claims overlap with those of the copending application."

The Examiner provisionally rejected claims 1-30 under the judicially created

doctrine of double patenting as allegedly being unpatentable over claims 1-26 of copending Application No. 11/122,515. The Examiner concedes that “the conflicting claims are not identical.” Nevertheless, the Examiner asserts that “they are not patentably distinct from each other because the subject matter embraced in the instant claims are [sic] also embraced in the copending application 11/122515. Note the trifluormethylpyrimidine with indol-2-one side chain attached through NH embraced in the instant claims are claimed in the copending application.”

The Examiner provisionally rejected claims 1-30 under the judicially created doctrine of double patenting as allegedly being unpatentable over claims 1-32 of copending Application No. 11/127,676. The Examiner concedes that “the conflicting claims are not identical.” Nevertheless, the Examiner asserts that “they are not patentably distinct from each other because the subject matter embraced in the instant claims are [sic] also embraced in the copending application 11/127,676. Note substituents 2, 4 and 5 of the instant claims overlap with those of the copending application.”

The Examiner provisionally rejected claims 1-30 under the judicially created doctrine of double patenting as allegedly being unpatentable over claims 1-27 of copending Application No. 11/124,006. The Examiner concedes that “the conflicting claims are not identical.” Nevertheless, the Examiner asserts that “they are not patentably distinct from each other because the subject matter embraced in the instant claims are [sic] also embraced in the copending application 11/124,006. Note substituents 2, 4 and 5 of the instant claims overlap with those of the copending application.”

The Examiner provisionally rejected claims 1-30 under the judicially created doctrine of double patenting as allegedly being unpatentable over claims 1-17 of copending Application No. 11/127,809. The Examiner concedes that “the conflicting claims are not identical.” Nevertheless, the Examiner asserts that “they are not patentably distinct from each other because the subject matter embraced in the instant claims are [sic] also embraced in the copending application 11/127,809. Note substituents 2, 4 and 5 of the instant claims overlap with those of the copending application.”

Applicants do not agree with the Examiner’s position on these provisional double patenting rejections. However, Applicants will address these rejections once the

claims in the subject application are found otherwise allowable.

VI. New Claims 31 and 32

New claim 31 is directed to "a method for the treatment of breast cancer in a mammal comprising administering to said mammal an amount of a compound of claim 1 that is effective in treating breast cancer." Support for new claim 31 can be found, for example, in original claims 25-29. Applicants also note that the Examiner acknowledged that the specification is "enabling for treating breast cancer."

New claim 32 is directed to "a pharmaceutical composition comprising a compound of claim 1 and a pharmaceutically acceptable carrier." Support for new claim 32 can be found in the original specification at, for example, original claim 30. Applicants note that original claim 30 was rejected under 25 U.S.C. § 112, first paragraph for as allegedly being non-enabling for reciting "intended use to 'treatment of abnormal cell growth.'" However, new claim 32 does not recite this intended use.


CONCLUSION

For the reasons set forth hereinabove, Applicants respectfully request that the Examiner reconsider the rejections set forth in the December 7, 2005 Office Action and earnestly solicit allowance of the claims pending in the subject application. No additional fee is believed due. However, if any fee is due, the Examiner is authorized to charge the fee to Applicants' Deposit Account No. 16-1445.

If the Examiner wishes to comment or discuss any aspect of this application or response, Applicants' undersigned attorney invites the Examiner to call him at the telephone number provided below.

Date: April 4, 2006

Respectfully submitted,



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